PINEUS STROBI HTG. (HOMOPTERA, ADELGIDAE), A PEST OF *PINUS STROBUS*

PINEUS STROBI HTG. (HOMOPTERA, ADELGIDAE), UN DĂUNĂTOR AL PINULUI STROB

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Abstract: *In this paper is presented health situation of species Pinus strobi tree from Timisoara city parks, by the point of view of infestation with the pest Pineus strobi. We had made observations on the number of 151 trees, with age between 10 and 110 years. After our observations were been establish a infestation of different intensities at 87% of analyzed trees, infestation, which can induce a early drying of the trees, trough overlapping with other destabilization factors like are pollution and parasite fungus.*

Rezumat: *În lucrarea de faţă este prezentată starea de sănătate a arborilor de Pinus strobus din parcurile localităţii Timişoara, din punct de vedere al infestării cu dăunătorul Pineus strobi. S-au efectuat observaţii asupra unui un număr de 151 de arbori, cu vârsta cuprinsă între 10 şi 110 ani. În urma observaţiilor s-a determinat o infestare de diferite intensităţi la 87% din arborii analizaţi, infestare, care poate determina uscarea timpurie a arborilor, prin suprapunere cu alţi factori destabilizatori cum sunt poluarea şi ciupercile parazite.*

Key words**:** *Pineus strobi, pest, Pinus strobi*
Cuvinte cheie: *Pineus strobi, dăunător, Pinus strobi*

INTRODUCTION

Pineus strobi Htg. have origin in North America, where principal plant host is *Picea nigra* and secondary host *Pinus strobus*. In North America occasionally has been met on *Pinus sylvestris*, *Pinus ponderosa*, *Pinus banksiana*, *Pinus rigida*, *Pinus nigra* (Mazzey, Mariuk, 2006). In Europe the pest is met on the bark of eastern white pine in special in parks on old trees or sickly, caused by pest activity and fungus activity like the rust of white pine *Peridermium strobi* Kleb.. It is more meet on sapling nursery in last two years before being used like planting material (NOVAC et al., 1992).

The observations have followed the intensities of pest attack on the bark of eastern white pine and his frequency in Timisoara parks.

MATERIALS AND METHOD

The observations were been done in the year 2007 in six parks from Timisoara on eastern white pine and has consist of the appreciation of infestation intensity using a scale of estimation like: low intensity of infestation in case of attack localize on bark in the zone of insertion of branches on trunk; middle intensity of infestation in case of attack localize on bark in the zone of insertion of branches on trunk and infestation of bark of trunk; high intensity of infestation in case of attack overcome the trunk and branches inclusive stems. Establish of interpretation scale were been made in function of observations made on pest.

The frequency of attack (F%) has calculated with formula:

$$F\% = (n/N) \cdot 100$$

where: n represented the number of attacked trees;

N represented the number of analyzed trees.

RESULTS AND DISCUSSION

Pineus strobi Htg. made part of order *Homoptera*, superfamily *Aphidoidea*, family *Adelgidae*, subfamily *Caesalpinioidea.*

On the time, the species known different names like: *Chermaphis strobi* L., *Eopineus strobi* Htg., *Chermes corticalis* Kalt., *Chermes pinicorticis* Titch., *Pineus strobus* Htg. (MAZZEY, MARIUK, 2006).

The *Sexupara* adult is little, 1-1.3 mm long (ENE, 1979), approximate 1 mm (NOVAC *et al*., 1992), the color of the body is dark brown (NOVAC *et al*., 1992), with sort legs, covered with a wooly secretion (MAZZEY, MARIUK, 2006).

The eggs are whitely to yellow brown and covered with a white wooly mass, secreted by females (MAZZEY, MARIUK, 2006).

The *Sistentes* larva has a stage of young larva (*Neosistentes*). Young larva (*Neosistentes*) has the color of the body brown dark on dorsal and ventral part. The body is covered with waxy thread. When the larva *Neosistentes* become *Sistentes*, the body color become brown reddish dark and covered completely with waxy wool (NOVAC et al., 1992). Waxy wool has protective role and female secrete honey dew which frequently become blackly and luck like bark covered with soot.

After the observations effectuated were establishing that the attack begins through installation of the pest on bark from proximity of the zone of insertion of the branches on trunk. From this point he has extended on bark of branches, stems and trunk between two rows of branches. The attack begins when the trees have age of 25-30 years and can continue since at complete drying of the tree.

The larva passes the winter after first shed together in colonies, on trunk or branch bark of *Pinus strobi*. Early in springtime the larva sucks sap in continuation and secreted a lot of wax that to produce flake of wax. To the end of the month April larva ending this stage and become *Sistentes*. This *Sistentes* produce 200-300 eggs unfecundated covered with her body and partial with flake of wax. After a short time, larva migrate on young branches where sucks on bark. A part of the larva has developed and become adults with wings (*Sexupara*) which will be mother of sexuat descendant, and the other part become *Sistentes* without wings.

In Europe the replication of the pest in only partenogenetic, loosing of the *Sexupara* is a result of absence oh primary host plant *Picea nigra*. Losing of *Sexupara* is compensate through a high rate of replication capacity of *Sistentes*, the species presented more generation on year (NOVAC et al., 1992), which practical is a strategy of surviving genetically conditioned (LAUER, discussion 2007). The level of infestation is very high and very evident (figure 1).

From all observed trees, a percentage of 87% were presented different intensities of the attack which make us to ask ourselves about the resistance of eastern white pine from parks at this pest.

The attack intensity was low at 15.2% of analyzed trees, middle at 29.1% and high at 42.4%, the rest of the trees were without attack (table 1).

The analyzed trees with age until 20 years were healthy in all those six parks, the percent of healthy trees were 100%.

Low intensity of the attack has been observed at trees with age between 25 and 30 years. From all analyzed trees, low intensity of the attack was recorded at 70% of trees with this age.

The trees with age between 30 and 110 year were presented a middle and high intensity of the attack.

Figure 1. The infestation of eastern white pine with *Pineus strobi* Htg.

Table 1

The intensity and the frequency of infestation at eastern white pine with *Pineus strobi* Htg.

no.	Observation points	No. of analyzed trees	Attack intensity			Attack frequency
			Low	Middle	High	
1.	Central Park	31	8	6	10	77.4
2.	Rozelor Park	16	4	5	1	81.2
3.	Botanic Park	4	1	-	2	75.0
4.	Continental Park	7	1	2	4	100.0
5.	USAMVB Park	78	4	27	45	97.4
6.	Silvic Park	15	5	4	2	73.3

Breaking of terminal bud of pines and presence of forkly trunks in consequence, induce trees sensitiveness thus trees with age of 30-40 years presented a high intensity of the attack.

If attack of the pest *Pineus strobi* is overlapping a harmful action if different parasitic fungus and over destabilization activity of pollution can result drying completely of exemplars of affected eastern white pine.

The presence of trees in group of 3-5 trees is favorable for pest development, wind and birds contributed at spreading of the pest from a host plant to the other.

CONCLUSIONS

The results obtained after observations made in Timisoara parks on health situation of eastern white pine by the point of view of the attack of *Pineus strobi* Htg., together with the information from specialty literature can permit to formulate next conclusions:

- *Pineus strobi* Htg. prefer the bark from the zone of insertion of branches on trunk or stems on branches;
- the trees of eastern white pine with age until 20 years do not be preferred by *Pineus strobi*;

- the trees begin to be attacked at the age of 25-30 years, when these sensitiveness increase because of urban pollution;
- over the age of 30 years the trees are sufficient sensitiveness to present middle and high intensity of infestation at the majority of analyzed trees;
- overlapping the attack of *Pineus strobi* on the harmful action of different parasitic fungus and pollution can induce drying of eastern white pine from parks.

LITERATURE

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